

DESCRIPTION

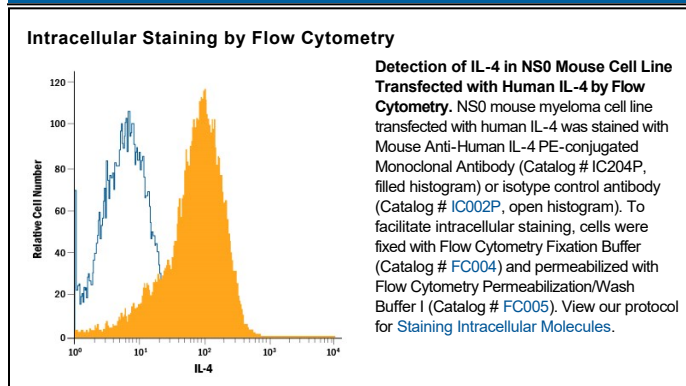
Species Reactivity	Human
Specificity	Detects human IL-4 in direct ELISAs and Western blots. In Western blots, this antibody does not cross-react with recombinant mouse IL-4.
Source	Monoclonal Mouse IgG ₁ Clone # 3007
Purification	Protein A or G purified from ascites
Immunogen	<i>E. coli</i> -derived recombinant human IL-4 His25-Ser153 Accession # P05112.1
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the [Technical Information](#) section on our website.

	Recommended Concentration	Sample
Intracellular Staining by Flow Cytometry	10 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Interleukin-4 (IL-4), also known as B cell-stimulatory factor-1, is a monomeric, approximately 13-18 kDa Th2 cytokine that shows pleiotropic effects during immune responses (1-3). It is a glycosylated polypeptide that contains three intrachain disulfide bridges and adopts a bundled four α -helix structure (4). Human IL-4 is synthesized with a 24 aa signal sequence. Alternate splicing generates an isoform with a 16 aa internal deletion. Mature human IL-4 shares 55%, 39%, and 43% aa sequence identity with bovine, mouse, and rat IL-4, respectively. Human, mouse, and rat IL-4 are species-specific in their activities (5-7). IL-4 exerts its effects through two receptor complexes (8, 9). The type I receptor, which is expressed on hematopoietic cells, is a heterodimer of the ligand binding IL-4 R α and the Common γ Chain (a shared subunit of the receptors for IL-2, -7, -9, -15, and -21). The type II receptor on non-hematopoietic cells consists of IL-4 R α and IL-13 R α 1. The type II receptor also transduces IL-13 mediated signals. IL-4 is primarily expressed by Th2-biased CD4⁺ T cells, mast cells, basophils, and eosinophils (1, 2). It promotes cell proliferation, survival, and immunoglobulin class switch to IgG4 and IgE in human B cells, acquisition of the Th2 phenotype by naïve CD4⁺ T cells, priming and chemotaxis of mast cells, eosinophils, and basophils, and the proliferation and activation of epithelial cells (10-13). IL-4 plays a dominant role in the development of allergic inflammation and asthma (12, 14).

References:

1. Benczik, M. and S.L. Gaffen (2004) *Immunol. Invest.* **33**:109.
2. Chomarat, P. and J. Banchereau (1998) *Int. Rev. Immunol.* **17**:1.
3. Yokota, T. *et al.* (1986) *Proc. Natl. Acad. Sci. USA* **83**:5894.
4. Redfield, C. *et al.* (1991) *Biochemistry* **30**:11029.
5. Ramirez, F. *et al.* (1988) *J. Immunol. Meth.* **221**:141.
6. Leitenberg, D. and T.L. Feldbush (1988) *Cell. Immunol.* **111**:451.
7. Mosman, T.R. *et al.* (1987) *J. Immunol.* **138**:1813.
8. Mueller, T.D. *et al.* (2002) *Biochim. Biophys. Acta* **1592**:237.
9. Nelms, K. *et al.* (1999) *Annu. Rev. Immunol.* **17**:701.
10. Paludan, S.R. (1998) *Scand. J. Immunol.* **48**:459.
11. Corthay, A. (2006) *Scand. J. Immunol.* **64**:93.
12. Ryan, J.J. *et al.* (2007) *Crit. Rev. Immunol.* **27**:15.
13. Grone, A. (2002) *Vet. Immunol. Immunopathol.* **88**:1.
14. Rosenberg, H.F. *et al.* (2007) *J. Allergy Clin. Immunol.* **119**:1303.